



Choose Clean Water  
COALITION

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October 15, 2023

Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, Maryland 21230

*RE: Maryland Climate Pathway Report*

To Whom This May Concern,

The undersigned members of the Choose Clean Water Coalition (Coalition) write to formally comment on the Maryland Department of the Environment's *Climate Pathway Report*. We would like to thank you for providing this opportunity for public input and feedback on Maryland's climate planning process. It is imperative to hear from a diverse cross-section of stakeholders if we are to reach our collective climate goals to achieve emissions reduction targets and stave off climate disasters.

The Coalition is made up of more than 290 nonprofit organizations across the Chesapeake Bay watershed, with 85 member organizations located in Maryland. Our members represent a variety of interests, including but not limited to land and wildlife conservation, climate change, environmental justice, sustainable agriculture, clean energy, recreation and public access, and urban/suburban stormwater runoff. What connects all of our members is our collective interest and goal in restoring clean water to all of the rivers and streams in the Chesapeake Bay watershed. Additionally, we recognize that frontline communities including Black, Indigenous, and People of Color (BIPOC) face disproportionate impacts to climate change. Furthermore, climate change will continue to impede progress to meet our 2025 clean water goals to restore the watershed if we do not take critical action.

### ***Co-benefits of water quality improvements***

There are numerous co-benefits of Greenhouse Gas (GHG) emission reductions, many of which are referenced in the Maryland Climate Pathway report including public health impacts. Water quality improvements associated with greenhouse gas emission reductions are extensive. For example:

- Air pollution from combustion that re-enters the watershed through atmospheric deposition – surface water quality improvement is a direct co-benefit of emissions reductions.
- Stormwater runoff that captures chemical compounds from fuel sources on impervious surfaces will see an improvement in water quality if there are fewer contaminants on pavement due to increases in electric vehicles and zero emission transit adoption.
- Waste mismanagement contributes significantly to water quality concerns particularly in close proximity to incinerators, waste treatment plants and other disposal and transfer sites.

- Soil carbon sequestration strategies are linked with the co-benefits of ground and surface water quality improvements.
- Forests and wetlands are the natural protectors and filters that aid ecosystem recovery. Forests, wetlands and submerged aquatic vegetation (also referenced as blue carbon in the report) should be accounted for in their present state, prioritized for preservation and plans for additionality should be incorporated into the Climate Plan.

In the accounting process for meeting net zero goals, we recommend that water quality co-benefits be strongly considered for each policy or project outcome. When making tough decisions about prioritization, we can choose to have the biggest impact for both the climate and for our most treasured resources of the Chesapeake Bay watershed.

### ***Fossil fuel power plant closure and transition planning***

The siting of fossil fuel infrastructure has historically been shouldered disproportionately by already overburdened Black, Brown, Indigenous, immigrant and low-income communities. The air and water quality impacts of fossil fuel infrastructure reach far beyond their greenhouse gas emissions, and include pollutants that are toxic to human health and degrade the ecosystems that rely on an equilibrium of natural compounds. It is estimated that  $\frac{1}{3}$  of the nitrogen in the Chesapeake Bay comes from atmospheric deposition, a process in which airborne particles enter the watershed.<sup>1</sup> A concrete timetable for coal, gas, and oil power plant closures by 2030, pre-and-post closure workforce transition programs, and remediation of environmental hazards on site, is critical to communities that have been burdened by fossil fuel pollution and its healthcare costs due to air and water quality degradation. Coal, gas and dirty fuel power plant closure and worker and community transition plans must be an explicit component of the Maryland Climate Plan.

Maryland has three remaining active coal fired power generating plants with two coal fired units scheduled to close by 2025 (Brandon Shores & Wagner in Northern Anne Arundel County) and one in Allegany County with the possibility of a contract buyout and closure before its anticipated contract through 2030. Though the Climate Pathway Report acknowledges the anticipated transition off of coal, there are no references to ensure that there is a workforce transition plan nor decommissioning, decontamination and community protections from the legacy pollution sources at coal plant sites that impact water quality and human health. The case study of abandoned mine lands being converted to a community solar energy project in Garrett County is an excellent example to learn from in the Climate Pathway Report. Meanwhile the harmful legacy of pollution from the Chalk Point power plant on the community of Eagle Harbor is a case study on the social and environmental impacts of not fully planning for the closure and transition off of fossil fuel infrastructure.<sup>2</sup> The final Climate Plan will need to lay out how to make successful conversions a norm, not an outlier. Additionally, abandoned mine lands and brownfields across the state should undergo analysis and feasibility studies for converting to solar, wind and storage projects.

A fossil fuel transition plan would create jobs for many sectors of the Maryland economy. In transitioning the fossil fuel infrastructure to clean energy product manufacturing or directly to clean energy generation, there are huge numbers of job opportunities for a variety of different skill sets. There will be work decommissioning the physical structures, engineering, environmental compliance, site contamination remediation, water quality monitoring, material

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<sup>1</sup> [Air Pollution](#), Chesapeake Bay Program.

<sup>2</sup> [Historic Black town in Prince George's Co. confronts power plant for contributing to flooding](#), WTOP News. 2021.

recycling, reconductoring transmission, and grid interconnection upgrades. There are a plethora of benefits to the local residents adjacent to fossil fuel infrastructure from avoiding the explosive hazards of a pipeline leak to abating the chronic noise pollution of gas compressor stations.<sup>3</sup>

### ***Soil Carbon Sequestration and Water Quality Improvements***

Agriculture remains Maryland's largest commercial industry, contributing around \$8.25 billion annually to the economy. It also remains the largest single land use in the state, with 2 million acres, or 32% of total land area used for farming in 2022.<sup>4</sup> We acknowledge that in order to meet the State's net-zero goals it is essential to employ best practices to manage agricultural soils as a carbon sink, in concert with the State's forests, which are Maryland's largest carbon sink. Carbon dioxide is the most commonly produced greenhouse gas, and carbon sequestration is the process of capturing and storing atmospheric carbon dioxide.<sup>5</sup> The co-benefits of soil carbon sequestration include: advancing food and nutritional security, improving soil biodiversity, and improving quality of water.<sup>6</sup>

Some of the many agricultural conservation best management practices (BMPs) which have large carbon sequestration benefits include establishing forested riparian buffers, propagating cover crops, limiting or eliminating tillage and improving nutrient management.<sup>7</sup> Soils with higher carbon content have more stable structure making them less prone to the kind of erosion that puts sediment and associated phosphorus into the Chesapeake Bay.

According to the 2021 study conducted by the Chesapeake Conservancy's Conservation Innovation Center, 459,639 tons of CO<sub>2</sub> equivalent were removed from the atmosphere in 2019 by agricultural BMPs in Virginia. This method demonstrates the potential to leverage the investment and expertise in Chesapeake Bay watershed restoration to further scale practices that maximize climate and water quality benefits of Bay restoration. The Chesapeake Bay Agreement mandated water quality improvements, which can be achieved in part through conservation practices that can also reduce greenhouse gas emissions by means of carbon sequestration.<sup>8</sup>

The Maryland Climate Pathway report correctly asserts enhancing land sinks will require significant afforestation and observation efforts, expansion of BMPs in agriculture and forestry to increase soil and standing carbon stocks, proactive management of coastal ecosystems, and improved measurement and monitoring practices to track success. The report goes on to explain that the Inflation Reduction Act (IRA) provides \$19.5 billion to support the U.S. Department of Agriculture's conservation programs to yield climate mitigation benefits. Starting this year and throughout the next five years, Maryland will be receiving an additional \$80 million in funds from these federal conservation programs, bolstering our current water quality improvement efforts by implementing new climate-smart practices. Continued investments and funding beyond the IRA's 2026 sunset for expanding these efforts would further help Maryland to reach its net-zero goals.

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<sup>3</sup> [Natural Gas Compressor Stations May Expose Nearby Residents To Chronic Noise Pollution](#), University of Maryland, School of Public Health.

<sup>4</sup> [Maryland at a Glance: Agriculture](#), Maryland Manual On-Line.

<sup>5</sup> [What is carbon sequestration?](#) United States Geological Survey.

<sup>6</sup> [Carbon Sequestration in Soil](#) Science Direct.

<sup>7</sup> [Climate Benefits of Chesapeake Bay Restoration in Virginia](#) Chesapeake Conservancy. 2021.

<sup>8</sup> [Climate Benefits of Chesapeake Bay Restoration in Virginia](#) Chesapeake Conservancy. 2021.

The Climate Pathway report also gives directions for future emission reduction efforts, such as those for methane and nitrous oxide from agriculture. Ongoing research in this arena suggests the potential for policy support to further minimize these types of emissions. Surplus nitrogen from agricultural production is the leading cause of water quality problems in the U.S. and is a source of nitrous oxide, a greenhouse gas. Any reduction in the amount of nitrogen lost from farming practices would produce significant benefits for both water quality and climate protection.<sup>9</sup> Biological nitrogen fixation is the transformation of the relatively non-reactive atmospheric N<sub>2</sub> into its more reactive compounds, which can be used in the place of synthetic fertilizer, by soil microbes.<sup>10</sup> This reduces the amount of nutrients applied on agricultural lands and thus removes nitrous oxide from the atmosphere. Further, production of synthetic fertilizers is a significant source of greenhouse gas emissions that could be minimized by utilization of biological nitrogen fixation. Turf grass covers more than any single agricultural crop in Maryland.<sup>11</sup> When these acres are overfertilized, excess nitrogen and phosphorus flow into our local waterways.<sup>12</sup> Incentives to improve soil health and stimulate biological nitrogen fixation rather than over-use of synthetic fertilizers should be strengthened in order to further reduce the emission of this potent greenhouse gas.

### ***Stormwater Runoff Contamination Reduction from Fuel sources***

Stormwater runoff accounts for 17% of the nitrogen loads in the Chesapeake Bay Program Watershed Model and is the fastest growing source of pollution.<sup>13</sup> Among these sources are fuel leaks that come from gas, diesel and motor oil from cars, trucks, fueling stations and two-cycle and four-cycle motors such as personal and commercial lawn equipment. In fact, the largest source of oil in our oceans is from stormwater runoff.<sup>14</sup> According to the Department of Energy, Americans use 1.2 billion gallons of gasoline to fuel lawn mowers annually.<sup>15</sup> The EPA estimates that 17 million gallons are spilled in the process.<sup>16</sup>

Personal and commercial lawn equipment leak and spill fuel, easily impacting carbon (and other health-harming) emissions, soil health and water quality.<sup>17</sup> Policies to secure this transition would be helpful as two cycle motors not only produce greenhouse gas emissions and leak fuel; they also contribute to noise pollution that is detrimental to wildlife and human health. A buyback, recycling program, procurement contracts for new electric nonroad equipment and a retirement replacement program from the state of Maryland should all be considered to significantly spur adoption of electric lawn equipment.

Additionally, best practices in upland stormwater runoff control are necessary to meet the Chesapeake Bay restoration goals. Runoff from an excess of impervious surfaces, including highways, fueling stations, and industry, contribute to the Total Maximum Daily Load (TMDL) and cause contamination of streams, rivers and ultimately the Bay. It is imperative not only that Maryland continues to implement new stormwater management devices, but considers much

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<sup>9</sup> Faeth and Greenhalgh. [Policy Synergies between Nutrient Over-enrichment and Climate Change](#), Estuaries. 2002.

<sup>10</sup> [Nitrogen Fixation](#) ScienceDirect.

<sup>11</sup> Bennet & McCarthy-Kersey. [USDA Summary Statistics Maryland Turfgrass](#). United States Department of Agriculture, National Agricultural Statistics Service, Maryland Field Office. 2006.

<sup>12</sup> [Urban Fertilizers & the Chesapeake Bay](#), Environment America.

<sup>13</sup> [Stormwater Runoff](#), Chesapeake Bay Program.

<sup>14</sup> [Most Oil in the Sea Comes from Runoff on Land](#). UC Davis.

<sup>15</sup> [Clean Cities Guide to Alternative Fuel Commercial Lawn Equipment \(Brochure\), Energy Efficiency & Renewable Energy \(EERE\)](#), Department of Energy. 2011.

<sup>16</sup> [Cleaner Air : Gas Mower Pollution Facts](#), People Powered Machines.

<sup>17</sup> [Lawn Maintenance and Climate Change — PSCI](#), Princeton University. 2020.

needed updates and maintenance to existing best management practices that are outdated to meet the needs of current rainfall data.

The Climate Pathway Report assumes that there will be some electrification of nonroad gasoline usage.<sup>18</sup> While the assumption is hopeful, the policies to secure this transition would be necessary to reduce emissions in the gas powered equipment that remains on the market. The examples used of rebate programs and use of IRA funds in California are all positive examples. Maryland should implement policies that ensure the swift adoption of emissions standards for all energy combustion products and its final Climate Plan should proactively address the outsized greenhouse gas (GHG) contribution that lawn care has and its fuel runoff impacts on the Chesapeake Bay.

### **Waste Management Reform**

The Maryland Climate Pathway Report acknowledges the usefulness of composting of organic matter in improving air and water quality through reducing incineration emissions.<sup>19</sup> However, it falls short of fully addressing the systemic harms of incineration in Black and Brown communities because it fails to recommend removal of incineration from the Tier 1 Renewable energy category in the Renewable Portfolio Standard nor set a timetable for closure of trash incinerators. Generations of Black, Brown and low income Marylanders have been organizing and mobilizing against incinerators in their neighborhoods due to the poor health outcomes and devaluation of lives, property and livelihoods. Disincentivizing incineration should be a priority equity issue to address.

Furthermore, the case study in White Marsh admits that even after using some of the methane collected at landfills for energy generation the volume of methane produced at the landfill is so great that some of it must be turned into carbon dioxide and vented to the atmosphere. This demonstrates that the volume of organic matter in landfills is unsustainable and a more active approach should be taken to modernize the waste management system.

Currently many jurisdictions in Maryland have competing, inefficient, and costly private industries that charge steep fees to customers for waste removal and transportation. Then private industry receives additional subsidization from taxpayers and ratepayers to convert trash to dirty energy. This is fundamentally flawed, inequitable and producing enormous amounts of air pollution, water pollution and GHG emissions. While references to removing barriers to composting give some indication of direction to policy solutions, the state must work to institutionalize composting across the state.

### **Forest and Wetland Protections**

Maryland's natural beauties of woodlands, wetlands, mountains and coastlines have ecological value as well as carbon storage potential. While the Maryland Climate Pathway Report alludes to the carbon sequestration inherent in healthy and biologically diverse ecosystems of wetlands and submerged aquatic vegetation (SAV), it offers no real policy solutions. There is an acknowledgement of the barriers in place, but real action is needed to go beyond preservation of aquatic ecosystems from destruction to restoration. There is a reference to carbon storage potential of SAVs as blue carbon, but no policy proposal or modeling of what is current in order to ensure we're not crediting carbon storage erroneously. In order to reach GHG targets and

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<sup>18</sup> Pg 42 Maryland Climate Pathway Report

<sup>19</sup> Pg 75 Maryland Climate Pathway Report

Chesapeake Bay restoration goals, a significant increase in attention, prioritization and resources must be made to forest and wetland protections.

Maryland is losing trees at an alarming rate. From 2001 to 2022, the state of Maryland lost 64.2 kilo-hectares (kha) of tree cover. This is equivalent to 24.7 Mt of CO<sub>2</sub>e emissions.<sup>20</sup> Tree canopy mapping tools are out of date as soon as they are published, fee-in-lieu funds are sitting unused and replanting is not happening at the rate that needs to take place in order to meet forest conservation and urban and suburban tree canopy goals. Enforcement of noncompliance of existing regulations will be critical to meeting the goals as well as an active approach to reforestation, afforestation and replanting suburban and urban tree canopy across all state properties, easements and MOUs between governmental agencies.

Maryland's living shoreline is also being impacted by climate change. Sea level rise and land subsidence play a role too and it is critical that we take accurate account of carbon storage in changing environments. For example, the Blackwater National Wildlife Refuge located south of Cambridge, Maryland, loses approximately 300 acres of tidal wetlands per year and has lost over 5,000 acres since its establishment. If Maryland plans to use the carbon storage potential to meet its climate obligations, we must accurately account for and protect wetlands. Maryland should use the IPCC standard methods for measuring carbon to quantify the blue carbon stored in coastal ecosystems. The careful inventory must then be followed by advancing restoration measures of these ecosystems.<sup>21</sup>

Wetlands are being lost daily through the land development process, and large rain storm events demonstrate the magnitude of the damage that can be done with each impervious surface added to a landscape. Wetland restoration projects should be prioritized in rural, urban and suburban areas. Wetlands can be enhanced during the development and redevelopment process and can leverage private capital into the restoration system. Ultimately, it must be noted that the final Climate Plan must include blue carbon restoration and additionality for it to be meaningful.

There should be an all-of-the-above approach to improving downstream conditions and taking advantage of opportunities to improve upstream conditions that will improve ecosystem health and function. Since the federal government no longer protects wetlands under the broad umbrella of the Clean Water Act, Maryland must act to ensure that wetlands will be preserved regardless. Coastal wetlands are a carbon sink and Maryland's portion of the Chesapeake Bay has ample opportunities for tidal wetland restoration.

## **Conclusion**

The myriad of threats to the Chesapeake Bay go beyond GHG emission numbers alone. The climate is changing far more rapidly than our ability to adapt to it. This is evident in the huge array of issues that the Climate Pathway Report addresses and those that it does not. While emissions calculations are critical, they sometimes miss the bigger picture of ecosystem outcomes. Water is the tangible uniting essence that connects the rainfall, drinking water, recreation, ecosystem and economies of our shorelines, creeks, rivers, marshland, Chesapeake and Atlantic coastal bays. The Chesapeake Bay is the largest estuary in the United States and its health is paramount to our collective survival. The Coalition urges the state of Maryland to be mindful of the connection between greenhouse gas emissions and water quality as it completes

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<sup>20</sup> [Maryland, United States Deforestation Rates & Statistics | GFW](#), Global Forest Watch.

<sup>21</sup> [Coastal 'Blue Carbon': An Important Tool for Combating Climate Change. The Pew Charitable Trusts.](#)

its 2023 Climate Plan. All state agencies and local governments should be encouraged and incentivized to institute best practices that will both reduce emissions and enhance water quality and way of life.

Sincerely,

American Chestnut Land Trust  
Annapolis Green  
Baltimore Tree Trust  
Catoctin Land Trust  
Chesapeake Conservancy  
Chesapeake Legal Alliance  
Citizens to Conserve and Restore Indian Creek  
Defensores de la Cuenca  
Dorchester Citizens for Planned Growth  
EcoLatinos  
Environmental Policy Innovation Center  
Friends of Nanticoke River  
Hispanic Access Foundation  
Interfaith Partners for the Chesapeake  
Maryland Conservation Council  
Maryland League of Conservation Voters  
Maryland Pesticide Education Network  
Montgomery Countryside Alliance  
Muddy Branch Alliance  
National Aquarium  
Nature Forward  
Neighbors of the Northwest Branch  
Patuxent Tidewater Land Trust  
Port Tobacco River Conservancy  
Rock Creek Conservancy  
Southern Maryland Audubon Society  
St. Mary's River Watershed Association  
Sweet Springs Resort Park Foundation Inc.  
Sweet Springs Watershed Association  
Waterkeepers Chesapeake